

WE CLAIM:

1. A fluid oxygenating apparatus comprising:
 - a housing defining a chamber;
 - a core positioned within the chamber, the core including a channel formed therein, wherein the channel includes an inlet end and an outlet end; and
 - a bubble release port communicating with the outlet end of the channel, wherein fluid is flowed through the inlet end of the channel and bubbles are released through the bubble release port.
2. The apparatus of claim 1 wherein the housing includes a body portion and a cap portion, the bubble release port formed in the cap portion.
3. The apparatus of claim 2 wherein the cap portion is a separate member attached to the body portion.
4. The apparatus of claim 1 further comprising a plurality of fibers positioned in the chamber and surrounding the core.
5. The apparatus of claim 4 wherein the fibers are coated with a biocompatible coating.
6. The apparatus of claim 5 wherein the biocompatible coating prevents the passage of bubbles through the fibers.
7. The apparatus of claim 4 further comprising a first potting element adjacent a first end of the fibers.

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8. The apparatus of claim 7 further comprising a second potting element adjacent a second end of the fibers.

9. The apparatus of claim 8 wherein the housing includes a body portion and a cap portion, the bubble release port formed in the cap portion and the cap portion attached to the first potting means via a mating feature.

10. The apparatus of claim 1 further comprising a heat exchanger operatively connected with the channel, the heat exchanger including an inlet port to receive the fluid into the heat exchanger and channel.

11. The apparatus of claim 1 further comprising a hemoconcentrating device operatively connected with the bubble release port.

12. The apparatus of claim 11 wherein fluid being flowed through the apparatus is flowed through the hemoconcentrator without additional pumping means.

13. The apparatus of claim 1 further comprising a fluid sampling device operatively connected with the bubble release port.

14. The apparatus of claim 1 wherein the bubble release port has a first end communicating with the outlet end of the channel and a second end, further comprising:

a dome-like structure at the first end.

15. The apparatus of claim 1 wherein the bubble release port has a first end communicating with the outlet end of the channel and a second end, further comprising:

a toroidal structure at the first end.

16. The apparatus of claim 1 wherein the bubble release port has a first end communicating with the outlet end of the channel and a second end, further comprising:

a helical structure at the first end.

17. A method of debubbling a fluid oxygenating apparatus comprising:

providing a housing defining a chamber, a core positioned within the chamber having a channel with an inlet end and an outlet end and a bubble release port communicating with the outlet end of the channel;
flowing fluid through the inlet end of the channel;
collecting bubbles adjacent the outlet end of the channel; and
releasing bubbles through the bubble release port.

18. The method of claim 17 further comprising:

flowing the debubbled fluid through a plurality of fibers;
oxygenating the fluid as it passes through the fiber; and
flowing the fluid out a fluid outlet formed in the housing.

19. The method of claim 17 further comprising:

accumulating bubbles in a dome portion adjacent the outlet end of the channel.

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20. The method of claim 17 further comprising:
accumulating bubbles in a helical portion adjacent the outlet end of
the channel.
21. The method of claim 17 further comprising:
accumulating bubbles in a toroidal portion adjacent the outlet end
of the channel.
22. The method of claim 17 further comprising:
providing a heat exchanger operatively connected with the channel,
and
flowing fluid through the heat exchanger.
23. The method of claim 17 further comprising:
providing a hemoconcentrator operatively connected with the
bubble release port;
providing a pumping means to pump fluid through the fluid
oxygenating apparatus; and
flowing fluid through the hemoconcentrator using the same
pumping means.
24. The method of claim 17 further comprising:
providing a sampling device operatively connected with the bubble
release port; and
sampling the fluid via the bubble release port.

25. A fluid oxygenating apparatus comprising:

- a housing defining a chamber;
- a core positioned within and operatively attached to the housing, the core including a manifold formed therein;
- a fiber bundle positioned around the core; and
- a bubble release port positioned adjacent a top end of the housing and communicating with a top end of the manifold; wherein fluid is flowed through an inlet of the manifold and out at least one opening formed in a top of the core and through the fiber bundle and through an outlet in the housing while bubbles are released through the bubble release port.